

## REMARKS

By this Amendment, claims 3, 11, 13, 18, 19, 21 and 23 are amended and claims 4-9 and 25-30, which were previously withdrawn from consideration, are cancelled. After entry of this amendment, claims 1-3, 10-24 and 31 will be pending. Reconsideration in view of the following remarks is respectfully requested.

### Claims 4-9 and 25-30

Claims 4-9 and 25-30 are cancelled without prejudice or disclaimer. Applicant reserves all rights to pursue these and other similar claims in separate applications.

### Rejection of Claims 3, 13, 14, 18, 19, 23, 24 and 31 Under 35 U.S.C. § 112

The Office action rejects claims 3, 13, 14, 18, 19, 23, 24 and 31 under 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention. This rejection is respectfully traversed.

### Claim 3

Amended dependent claim 3 is directed toward the tread of a tire where the principal directions of the intermediate sections form an "angle of deflection in relation to a constant row direction or a changing local row direction."

The Office action rejects claim 3 under § 112 because "the description of the angle being 'in relation to one of a constant local row direction' is confusing."

Applicants submit that amended claim 3 alleviates any confusion and places claim 3 in a condition for allowance. As recited in claim 3, the principal directions of the intermediate sections form and angle of deflection in relation to a constant row direction or a changing local row direction. For example, with reference to the illustrated embodiments, a principal direction D7 of the intermediate section 7 form and angle of deflection  $\alpha$  in relation to a constant row direction D1 (as shown in FIG. 2B) or a changing local row direction D1 (as shown in FIG. 2C). Claim 3 particularly points out and distinctly claims the subject matter of the present invention. Therefore, for at least this reason, Applicants respectfully request the § 112 rejection as to claim 3 be withdrawn.

The amendment to claim 3 does not narrow its literal scope.

### Claims 13, 18 and 19

The Office action rejects claims 13, 18 and 19 under § 112 because the recited language "one of" should be deleted in view of the use of "or."

Applicants have amended claims 13, 18 and 19 by deleting "one of" from the claims. Applicants submit that amended claims 13, 18 and 19 particularly point out and distinctly claim the subject matter of the present invention. Therefore, based on the amendments made, Applicants respectfully request the § 112 rejection as to claims 13, 18 and 19 be withdrawn.

The amendments to claims 13, 18 and 19 do not narrow the respective literal scopes of these claims.

### Claims 13 and 14

The Office action rejects claims 13 and 14 under § 112 because the description of the curvature "being of an angle" is ambiguous since a curve (unlike a straight section) fails to define a single angle.

As recited in claim 13, the bends of the slits that are in the form of an arc "extend[] in a single configuration" to either a first curvature, a second curvature or sections with a third curvature. Each arc has a radius of curvature and extends over a curve or curvature that has a center angle measured in degrees. The specification describes the three curvature types as follows:

[T]he said bend 5 of the slits 2 is an arc 5b curving with a relatively large radius of curvature, which extends - in cases, in which the arc 5b continues as sections 15a with an unchanged radius of curvature R1 - as a single shape to the first curvature  $\chi_1$ , the value for which is at least 150° and at most 210°, or preferably 170° - 190°. Alternatively, the arc 5b extends - in cases, in which the arc 5b continues as substantially straight sections 15b - to the second curvature  $\chi_2$ , the value of which is at least 60° and at most 120°, or preferably 80° - 100°. Alternatively, the arc 5b extends - in cases, in which the arc 5b continues as sections 15c, the radiiuses of curvature R2 of which are bigger than the radius of curvature R1 of the said arc 5b - to the third curvature  $\chi_3$ , the value for which is between the said first and second curvature  $\chi_1, \chi_2$ .

Pg. 14, ll. 9-20. Therefore, the arc or curvature is not "being of an angle," but rather extends over a curve that has a central angle defined relative to the row direction.

For at least these reasons, claim 13 is not ambiguous and withdrawal of the § 112 rejection is respectfully requested.

As to claim 14, it recites the "radius of curvature of the angle is at most three times the width of the slit." The angle, as recited in claim 14, is distinguished from the angle's angular value  $\beta$ . Pg. 14, ll. 3-4. Specifically, the angle of claim 14 forms an angular value  $\beta$  defined as "the angular space of the slit sections coming to the angle 5a." Id. Therefore, the angle 5a has a radius of curvature at a location where the slit sections converge *and* has an angular value defining the space between the slit sections. See FIGS. 2A, 2B. For example, an angle 5a with a smaller radius of curvature forms a sharper corner point at the location where two slits intersect.

For at least these reasons, claim 14 is not ambiguous and withdrawal of the § 112 rejection is respectfully requested.

### **Claim 19**

The Office action rejects claim 19 under § 112 because it is unclear if "at least half" in claim 19 broadens "at most five times" in claim 1.

As recited in amended claim 19, the "thickness of the webs is at most three times the width of the slit, or at least half of the width of the slit." Claim 1 is directed to the width of the webs being "at most five times a width of the slits." Because claim 19 is directed to the thickness of the webs and claim 1 is directed to the width of the webs, "at least half" in claim 19 does not broaden "at most five times" in claim 1.

For at least this reason, withdrawal of the § 112 rejection as to claim 19 is respectfully requested.

### **Claim 23**

Claim 23 is amended to recite "a tread layer of rubber material on a tire carcass" (underlining added).

Applicants note that amended claim 23 is similar to claim 1, which is not rejected on these grounds. Therefore, claim 23 is believed to satisfy § 112 and withdrawal of the § 112 rejection as to claim 23 is respectfully requested.

### **Rejection of Claims 1-3, 10-24 and 31 Under 35 U.S.C. § 102(a)**

The Office action rejects claims 1-3, 10-24 and 31 under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Japan '413 (JP 2000-289413).

In response to the Office action's rejection, Applicants are submitting concurrently herewith and English-language translation of the foreign priority application and a statement certifying the accuracy of the translation. Applicants submit that the requirements to MPEP § 201.15 have been met.

Finland application number 20001234 was filed May 23, 2000 for a patent for the same invention in a foreign country which affords similar privileges as the United States. See 35 U.S.C. § 119. Therefore, the effective filing date of the present application should be May 23, 2000.

The earliest reference date of Japan '413 for purposes of establishing § 102(a) prior art is the publication date of the Japan '413 application, which is October 17, 2000. Because the effective filing date of the present invention, May 23, 2000, precedes the publication date of Japan '413, October 17, 2000, Japan '413 cannot be considered prior art for purposes of anticipation under § 102 or obviousness under § 103. Therefore, withdrawal of the Office action's rejection of claims 1-3, 10-24 and 31 as anticipated and, in the alternative, rendered obvious by Japan '413, is respectfully requested.

#### **Rejection of Claims 1-3, 10-24 and 31 Under 35 U.S.C. § 103(a)**

The Office action rejects claims 1-3, 10-24 and 31 under 35 U.S.C. § 103(a) as being unpatentable over Japan '710 (JP 7-40710) in view of Caretta (U.S. Pat. No. 6,382,283) and optionally Japan '418 (JP 8-244418). This rejection is respectfully traversed.

As best understood, the rejection is understood to be based on either of the following combinations of prior art references: (1) Japan '710 in view of Caretta; or (2) Japan '710 in view of Caretta and Japan '418.

#### **Claim 1**

Independent claim 1 is directed to a tread of a vehicle tire comprising webs that are "located between an end of at least a first slit and at least a second slit or its end, or located between a bend of the first slit and the second slit or its bend." The webs of claim 1 have a width that is "at most five times a width of the slits."

The combination of Japan '710 and Caretta, and the combination of Japan '710, Caretta and Japan '418, do not teach or suggest the features recited in claim 1. Specifically, neither combination teaches or suggests that the webs have "at most five times a width of the slits."

### Japan '710

The Examiner agrees that Japan '710 is silent as to the width of the sipes and the width of the web. To the extent Japan '710 suggests closely arranging sipes in a row such that the width of the transverse gap between the end of one sipe and the bend of the next sipe is substantially less than the circumferential spacing of the sipes, it says nothing concerning the width of the transverse gap being proportionately limited by the width of the sipes. Furthermore, the circumferential spacing of the sipes has little to do with the spacing between one end of one sipe and the bend of the next sipe. See Japan '418, FIG. 11.

### Caretta

The Examiner's position is that Caretta suggests spacing sipes having a width of less than 0.5 mm by a distance of 3-6 mm and therefore, renders obvious the webs having "at most five times the width of slits" as recited in claim 1. To the extent Caretta suggests the width of a web, the width suggested by Caretta falls outside the scope of claim 1. Taking the shortest distance between sipes suggested by Caretta as 3 mm and the largest sipe width as 0.5 mm, the shortest distance between sipes taught by Caretta is six times the width of the sipes ( $6 \times 0.5 \text{ mm} = 3.0 \text{ mm}$ ). Therefore, Japan '710 in combination with Caretta does not teach webs having "at most five times the width of the slits."

### Japan '418

Similarly, Japan '418, to the extent it teaches the width of a web, discloses a 0.5 mm sipe width and a 4 mm web width. It follows that the shortest distance between sipes taught by Japan '418 is eight times the width of the sipe ( $8 \times 0.5 \text{ mm} = 4.0 \text{ mm}$ ). Therefore, Japan '718 does not teach webs having "at most five times the width of the slits," and thus does not overcome the deficiencies of Japan '710 and Caretta.

Furthermore, neither Caretta nor Japan '418 in combination with Japan '710 suggest forming webs having "at most five times the width of the slits." Caretta does not disclose the functionality or purpose of selecting the specified sipe width or sipe spacing dimensions. In addition, the distance between sipes as discussed in Caretta is the circumferential distance, rather than the lateral distance. Because the webs of claim 1 are formed between the lateral spacing between adjacent slits, Caretta does not suggest the width of the webs as being limited by the width of the slits.

For at least these reasons, the combination of Japan '710 in view of Caretta and optionally Japan '418 does not render claim 1 obvious. Therefore, withdrawal of the rejection as to claim 1 is respectfully requested.

Dependent claims 2, 3 and 10-22 are allowable for at least the same reasons, as well as for the respective additional features recited therein. Therefore, withdrawal of the rejection as to claims 2, 3 and 10-22 is respectfully requested.

### **Claim 23**

Applicants have amended independent claim 23 to recite a "height of the webs decreasing as the tire wears out," rather than the height of the nubs based on a translation error. (emphasis added).

As amended, claim 23 is directed to a tread of a vehicle tire comprising "nubs inside the pattern blocks defined by the adjacent slits and respective webs." A nub is connected to adjacent nubs from bottoms of the slits by the webs.

As recited in claim 23, the webs have a height that is "smaller than a prevailing depth of the slit" as the height of the webs and the depth of the slit decrease during the wearing out of the tire.

In conventional tires, the sections between the slits in the pattern block have maximum flexibility when the tire is new because this is when the sections are at their greatest height. Alternatively, the sections have minimum flexibility when the tire has worn down because the sections are at a lower height and the relative mutual supporting between the sections is greater. However, referring to the webs as recited in claim 23, the relative height of the webs as compared to the depth of the slits is decreasing while the tread is wearing out, which results in a decrease of the mutual supporting between the sections and greater flexibility. Furthermore, the minimizing flexibility or stiffening of the sections is decreased through use of surface tear points as recited in claim 23.

As set forth below, the combinations of Japan '710 and Caretta or of Japan '710, Caretta and Japan '418, does not teach or suggest claim 23.

### **Japan '710**

Japan '710 is directed to a tire with the tilt angle of its slits being related to the slit's position on the "equatorial surface side" of the tire. See Japan '710 Constitution.

Japan '710 does not teach or suggest the webs recited in claim 23.

Also, Japan '710 does not explicitly teach "nubs inside the pattern blocks defined by the adjacent slits and respective webs" where the height of the webs is smaller than the prevailing depth of the slits as the tire wears out. Even to the extent that Japan '710 may implicitly teach webs, which is assumed only for the sake of argument, the height of those webs in relation to the depth of the slits as the tire wears out is not taught or suggested. Therefore, Japan '710 does not teach or suggest the webs as recited in claim 23.

### **Caretta**

Caretta discloses a winter type tire for vehicle wheels with flexible portions that have a grip edge in the form of an acute angle on the outer rolling surface of the tread band for improving the grip of the tire. Caretta, col. 1, ll. 20-25. The flexible portions 10 are disposed side by side and are separated from each other by sipes 8, 9. Col. 5, ll. 13-18; FIGS. 1-3. There is nothing in Caretta to suggest that any structure of the tire is designed to maintain performance as the tire wears out.

Caretta, with sipes and flexible portions being arranged side by side, as shown in FIG. 1, does not teach "webs located between an end of at least a first slit and at least a second slit or its end, or located between a bend of a first slit and the second slit or its bend" as recited in claim 23.

Caretta fails to overcome the deficiencies of Japan '710. Moreover, because Caretta does not teach "webs" as recited in claim 23, one of ordinary skill in the art would not have been motivated to modify Japan '710 to achieve the claimed feature of "a height of the webs decreasing as the tire wears out, the height being smaller than a prevailing depth of the slit that decreases during the wearing out of the tire." Therefore, the rejection based on the combination of Japan '710 and Caretta should be withdrawn.

### **Japan '418**

Finally, Japan '418 fails to overcome the deficiencies of the combination of Japan' 410 and Caretta. Japan '418 discloses a pneumatic tire applicable to running on an icy road. Japan '418 achieves the desired purpose of eliminating the adverse effects of water and improving edge effects by providing additive sipes to existing lateral sipes. Japan '418 Abstract. However, Japan '418 does not teach or suggest "surface tear points" or "webs located between an end of at least a first slit and at least a second slit or its end, or located between a bend of a first slit and the second slit or its bend" with a height that is smaller than the prevailing depth of the slits "during

the wearing out of the tire." Japan '418 fails to even mention the height of the webs or the depth of the "SAIPU" or slits, let alone teach or suggest the relationship between the two as the tire wears out.

Therefore, for at least these reasons, Japan '418 in combination with Japan '710 and Caretta does not teach or suggest the nubs as recited in claim 23. Accordingly, withdrawal of the rejection based on this combination of references as to claim 23 is respectfully requested.

Dependent claims 24 and 31 are allowable for at least the same reasons as for claim 23, as well as for the respective additional features recited therein. Accordingly, withdrawal of the rejection as to claims 24 and 31 is respectfully requested.

### CONCLUSION

Based on the foregoing, Applicants respectfully submit that the current claims are drawn to allowable subject matter and that the application is in condition for allowance. Should the Examiner believe that anything further is necessary to place this application in better condition for allowance, the Examiner is requested to contact Applicants' representative by telephone.

Respectfully submitted,

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